

Claims

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1. A method for manufacturing a thin-walled article, wherein a single- or multi-component, essentially polymer-based material (1), such as plastics, elastomers, and/or the like, is sprayed in an electrical field (E) in an electrically charged state, **characterized in**, that the thin-walled article is manufactured in the electrical field (E) by spraying (II) an electrically charged material into the contact with a mould (2) set at an electric potential, after which spraying cycle (II) the article is, at least in terms of its appearance, immediately a finished product after its demoulding/releasing from the mould (2).

2. A method as set forth in claim 1, **characterized in**, that a three-dimensional, thin-walled article is manufactured by spraying (II) the manufacturing material (1) in the electrical field (E) to the open mould (2) set at an electric potential.

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3. A method as set forth in claim 1 ~~or 2~~, **characterized in**, that the surface of said mould (2) is treated with surface-tension regulating surfactants, such as a silicone-, a polyolefine-based and/or a corresponding agent, especially for facilitating the demoulding/releasing of a finished article from the mould (2), and/or the surface tension of the material (1) to be sprayed is adjusted relative to the surface tension of a mould to a level that results in a uniform, thin material thickness.

4. A method as set forth in ~~any of the preceding~~ claims ~~1-3~~, **characterized in**, that an elastic product, such as a piece of clothing, a glove, a condom, and/or the like, is manufactured by spraying (II) the manu-

facturing material (1) in the electrical field (E) to the open mould (2) set at an electric potential.

5. A method as set forth in ~~any of the preceding claims~~ ¹⁻³, characterized in, that the manufacturing material (1) is heated by the action of a heating unit (01), whereafter ingredients (1a, 1b) of the multi-component manufacturing material are mixed together (02), the manufacturing material (1) is charged electrically (I) and sprayed (II) by the action of a processing unit (4), such as a spray bell or the like.

15. A method as set forth in ~~any of the preceding claims~~ ¹⁻⁵, characterized in, that a desired wall thickness for the article to be manufactured is achieved at any given point by providing the mould (2) with two or more treatment blocks (Li), which can be set at voltage levels substantially different from each other.

20. A method as set forth in ~~any of the preceding claims~~ ¹⁻⁶, characterized in, that the article is manufactured by using two or more processing units (4), essentially facing each other, by moving the mould (2) in the spraying situation (II), and/or by changing, during the spraying cycle (II), one or more process parameters, such as the volume flow, viscosity and/or the like of the manufacturing material or a component thereof, and/or the electrical field (E), such as the voltage level in one or more treatment blocks (Li) of the mould (2).

35. An apparatus for manufacturing a thin-walled article, said apparatus being intended for spraying a single- or multi-component, essentially polymer-based material, such as plastics, elastomers, and/or the like, in an electrical field (E) in an electrically

5 charged state, **characterized in**, that the apparatus comprises a mould (2) which can be set at an electric potential and which is removable/separable from an article that is formed after spraying (II) an electrically charged flow of material to the mould (2) and that is a finished product at least in terms of its appearance.

9. 10 An apparatus as set forth in claim 8, **characterized in**, that the apparatus comprises a heating unit (01) for heating a manufacturing material (1), and a processing unit (4), such as a spray bell or the like, for mixing together (02) ingredients (1a, 1b) of the multi-component manufacturing material, for charging the manufacturing material (1) electrically (I), and for producing a material spray (II) therefrom.

15 20 25 10. An apparatus as set forth in claim 8 ~~or 9~~, **characterized in**, that the apparatus comprises a mould (2), including at least two treatment blocks (Li) whose voltage levels can be set to essentially differ from each other, and/or a control unit (C) for changing, during the spraying cycle (II), one or more process parameters, such as the volume flow, viscosity, and/or the like of the manufacturing material or a component thereof, and/or the electrical field (E), such as the voltage level in one or more treatment blocks (Li) of the mould (2).

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